



Finnish Maritime Administration

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SAFE CARRIAGE OF PACKAGED IRRADIATED NUCLEAR FUEL, PLUTONIUM AND HIGH-LEVEL RADIOACTIVE WASTES ON BOARD SHIPS

The SOLAS Convention has been amended by resolution MSC.87(71), adopted by the Maritime Safety Committee of the International Maritime Organization to the effect that the provisions regarding the safe carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes (INF cargo) on board ships (the INF Code) have been included in the Convention. The amendments have been brought into force in Finland by Presidential Decree (987/2000) on 1 January 2001.

Provisions on the carriage of INF cargo have been added to the Decree on the Transport of Dangerous Goods in Packaged Form by Sea (666/1998) by a Council of State Decree (1163/2000) of 21 December 2000, which entered into force on 1 January 2001.

The purpose of the guidelines below is to clarify certain provisions included in the INF Code.

The Decree on the Transport of Dangerous Goods in Packaged Form by Sea (666/1998), as amended by Decree (1163/2000), and the Finnish Maritime Administration Order concerning the transport of dangerous goods in packaged form by sea (No. 6/30/2000), issued on 22 December 2000, have been published in FMA Bulletin No. 17/28.12.2000.

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SAFE CARRIAGE OF PACKAGED IRRADIATED NUCLEAR FUEL, PLUTONIUM AND HIGH-LEVEL RADIOACTIVE WASTES ON BOARD SHIPS

1. The INF Code

The INF Code means the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships, adopted by the International Maritime Organization (IMO). The INF Code deals with irradiated nuclear fuel carried as cargo in accordance with class 7 of the International Maritime Dangerous Goods Code (IMDG Code), schedule 10, 11, 12, 13 or 14.

The INF Code was brought into force in Finland on 1 January 2001 by a Presidential Decree Concerning the Entry into Force of Amendments to the International Convention on the Safety of Life at Sea, 1974, (987/2000). In accordance with section 2 of the Decree the provisions of the amendments are in force as a Decree.

2. Classification and packagings

INF cargoes shall be classified or the classification approved by the Radiation and Nuclear Safety Authority (the STUK), which also approves packages, containers and packaging types.

3. Transport documents

The Multimodal Dangerous Goods Form, as required by the IMDG Code, can be used for the carriage of INF cargo. In Finland, the certificates required for the carriage of radioactive materials in 5.1.5 of the IMDG Code are issued by the Radiation and Nuclear Safety Authority (the STUK).

4. Ship's class

For the purpose of the INF Code, ships carrying INF cargo are assigned to the following classes, when they have been granted the International Certificate of Fitness for the Carriage of INF Cargo:

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|---------------------------|---|
| <i>Class INF 1 ship:</i> | Ships which are certified to carry INF cargo with an aggregate activity less than 4,000 TBq. |
| <i>Class INF 2 ship:</i> | Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes with an aggregate activity less than 2×10^6 TBq and ships which are certified to carry plutonium with an aggregate activity less than 2×10^5 TBq. |
| <i>Class INF 3 ships:</i> | Ships which are certified to carry INF cargo with no restriction of the maximum aggregate activity of the materials. |

INF cargo that would be required to be carried on Class INF 3 ships shall not be allowed on passenger ships.

5. The ship's structure and equipment

In accordance with the INF Code:

- 1) the ship must meet certain structural requirements concerning damage stability, fire safety measures, electrical power supplies, temperature control of cargo spaces and the structural strength of deck areas;
- 2) the ship shall be provided with equipment for radiological protection;
- 3) class INF 2 and INF 3 ships shall be provided with an approved alternative source of electrical power;
- 4) the ship shall be provided with adequate permanent securing devices, in the designing of which the following ship acceleration levels shall be taken into account:

- 1.5 g longitudinally
- 1.5 g transversely
- 1.0 g vertically up
- 2.0 g vertically down

where g is the acceleration due to gravity, equal to 9.81 m/s^2

- 5) alternatively, where packagings are carried on the open deck or a vehicle deck, they shall be secured in accordance with the provisions of 6.2 of the INF Code.

6. Certificates

The Finnish Maritime Administration issues Finnish ships with Certificates of Fitness for the Carriage of INF Cargo.

7. Training of the ship's personnel

The training of personnel serving on board ships carrying INF cargo is subject to separate provisions.

8. Shipboard emergency plan

In accordance with the INF Code, every ship carrying INF cargo shall carry on board a shipboard emergency plan. Emergency plans of Finnish ships are approved by the Finnish Maritime Administration. Foreign ships sailing in Finnish territorial waters shall carry on board emergency plans approved by their flag states. Such a plan shall be written in the ship's working language or in a language understood by the ship's master and officers. As a minimum, the plan shall consist of:

- a) the procedure to be followed by the master to report an incident referred to under 9 below;
- b) a detailed description of the action to be taken immediately by persons on board in the event of an incident;
- c) the procedures for co-ordinating shipboard action with national and local authorities; and
- d) the list of authorities or persons to be contacted in the event of an incident involving INF cargo.

9. Notification in the event of an incident

The reporting requirements of regulation VII/7-1 of the SOLAS Convention shall apply both to the loss or likely loss of INF cargo overboard. Such a report shall also be made in the event of damage, failure or breakdown of the ship which affects the safety of the ship. In Finland, the report is made to Finland's national operational contact point, which is:

the Maritime Rescue Coordination Centre (MRCC Turku)

10. Ship's reporting obligations

Provisions on reporting obligations of ships carrying radioactive materials, as referred to in the INF Code, are included in the Decree on Reporting Obligations of Ships Carrying Dangerous or Polluting Goods (869/1994).

11. Ordering of the INF Code

The INF Code is included in the Supplement to the IMDG Code and can be ordered from the International Maritime Organization. The name and order number of the publication is:

Supplement to the IMDG Code 2000 Edition

IMO-210E

The publication can be ordered by mail or by phone from:

IMO Publications Section
4 Albert Embankment
London SE1 7SR
United Kingdom
(phone +44 20 7735 7611 fax +44 20 7587 3241)

The INF Code (in English) is also obtainable from the Finnish Maritime Administration, Maritime Safety Department.
